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REMARKS

The rejection of claim 26 under 35 USC 112, first paragraph, for inserting the adhesive is traversed by amending claim 26 into strict conformance with the original disclosure at page 3, line 14, of the original specification.

The rejection of claim 26 for obviousness-type double patenting from the cited Cerezo Pancorbo US Patent 6,508,909 in combination with the cited Morrison, et al. patent and Holsinger patents is traversed in correspondence with the rejection of claim 26 under 35 USC 103 for obviousness from the cited Cerezo Pancorba EP Patent publication in combination with the same Morrison, et al. and Holsinger patents because, as shown by the common priorities, for example, the Cerezo Pancorbo references are the same.

The Office Action indicates that the Cerezo Pancorbo et al. references teach a process for manufacturing a monolithic composite structure using an expansion compensating tooling/angle pieces while admitting they do not explicitly state that the surface of the tooling is a surface rough enough to promote friction in an amount effective to achieve common thermal expansion. While the admission of difference is true, in addition to not having a surface rough enough to promote friction in an amount effective to achieve common thermal expansion, they do not have any function related with the thermal expansion of the subcomponents of the monolithic structure. They are taught simply as molding tools for stringer 2. This is clear in EP paragraph 0020 and corresponding US column 3, lines 10 - 15:

> The stringer 2 is confined between two angle pieces 4, 4' of steel, aluminium, pneumatic cushion, etc., preferably Invar, like those shown in figure 2 which are adapted to the shape of the stringer 2. These angle pieces have a series of channels where elastomeric pipes 5, 5' are housed, retaining the resin flow of the composite material of the stringer 2.

In fact, in the Cerezo Pancorbo patent and publication, there is no teaching related to the problem raised in the claimed invention, viz. the reduction of thermally induced residual stresses and shape distortions of monolithic composite structures caused by dissimilar expansion coefficients of its subcomponents during the cooling phase of the thermal cycle.

Holsinger discloses an integrated method of fabricating a stiffened composite skin using a single curing process which is quite different to the manufacturing method subject of the claimed invention that uses precured subcomponents.

In any case, in Holsinger there is no teaching related to the problem raised in the claimed invention, viz. the reduction of thermally induced residual stresses and shape distortions of monolithic composite structures caused by dissimilar expansion coefficients of its subcomponents during the cooling phase of the thermal cycle.

In particular, the element 150 cited the Office Action has not any "friction feature" within the meaning of the claimed invention. Said element –a rubber or gel-coat layer overlay applied over the molding surfaces of tooling portions 110, 120 and flexible hinge 140a- is intended to provide a barrier between tooling portions 110 and 120 and the layers of composite material of I-beam 10 being formed and to be an aid in the removal of hinge tool 100 from I-beam 10 after curing. (see col. 5 lines 12-17).

Morrison discloses a thermally stable engineered layered ceramic structure, that operates with two aspects. One being a high temperature resistant insulating layer attached to a second more rigid structural layer. The insulating layer (the element mentioned in the Office Action reference to Col 10, lines 10-20) is temperature stable (i.e., microstructurally stable and effectively non-sintering), thermally insulating, low elastic modulus ceramic. The structural layer has a lower temperature stability compared to the insulating layer but is mechanically load bearing with a higher elastic modulus than the insulating layer. The two layers can be self adhering but may also be joined by an optional adhesive along junction 9.

Morrison has no point in common with the claimed invention.

Therefore, the combination of these references cannot raise double patenting or obviousness.

In view of the above it is submitted that claim 26 is different and non-obvious from the cited prior art:

- In the first place, because Cerezo Pancorbo et al. does not teach any thermal expansion related function of angles (4, 4').

- In the second place, because Holsinger does not teach any element enhancing the friction characteristic of the surface of an expansion compensation tooling (element 150 is a protecting overlay for the stiffener forming).

- In the third place, because Morrison does not refer to a process for manufacturing a composite structure but to a non-comparable ceramic structure.

Dependent claims 27-35 become allowable with the allowance of parent claim 26.

The substitution in the combination of references of the cited Breuer, et al. patent for the Cerezo Pancorbo patent and publication does not change this. The Office Action indicates that Breuer, et al. teach a process for manufacturing a monolithic composite structure using an expansion compensating tooling/strengthening profile members, but thios is not enough to make a rejection of the whole combination claimed for the reasons above.

Also regarding this statement, it should be noted that the strengthening profile members (7) taught by Breuer, et al. are not toolings used in the process for manufacturing a monolithic composite structure, but parts of the stiffeners of said composite structure. In col. 6, lines 18-27, they are described as follows:

> The stiffening profile members 7 are U- or L-sectional profile members consisting of fiber reinforced composite material which may be in a raw or non-cured state or in a merely partially cured state when it is used in the process as shown in FIGS. 2 and 3. In this context, the stiffening profile members 7 may be pre-formed and resin pre-impregnated prepreg intermediate parts. As an alternative, the stiffening profile members 7 may be blanks of fiber textile materials pre-cut to the required shape and laminated with a resin film.

Therefore, the strengthening profile members (7) taught by Breuer, et al. are not comparable to the expansion compensating tooling claimed for the present invention.

In view of the above it is submitted that claim 26 is non-obvious with respect to the cited prior art:

- In the first place, because Breur et al. does not teach any comparable element to the claimed expansion compensating tooling.

- In the second place, because Holsinger does not teach any element enhancing the friction characteristic of the surface of an expansion compensation tooling (element 150 is a protecting overlay for the stiffener forming).

- In the third place, because Morrison does not refer to a process for manufacturing a composite structure but to a non-comparable ceramic structure.

Dependent claims 27-35 become allowable with the allowance of parent claim 26.

Reconsideration and allowance are, therefore, requested.

Respectfully submitted,

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